

1 A. We use a composite average life of 18 years, based on the weighted average depreciation
2 service lives for all categories of investment we have considered. A substantial amount of
3 the investment the model estimates is for long-lived assets such as wire centers and buried
4 cable, and the composite life reflects these long lives. A straight-line depreciation method
5 is assumed, so that 1/18th of the total capital investment is taken as a depreciation expense
6 each year over the life of the investment.

7
8 **Q. HOW IS THE RETURN AMOUNT DETERMINED?**

9 A. The return amount is determined based on the cost of debt, cost of equity, and the
10 debt/equity ratio. The overall cost of capital is calculated as the sum of the cost of debt
11 times percent debt and cost of equity times time percent equity. Because depreciation
12 results in a declining value of plant in each year, and thus affects the return amount
13 required in each year, a net present value calculation is used to level the return amount
14 over the assumed life of the investment.

15

16 **Q. HOW ARE THE AMOUNTS OF FEDERAL AND STATE INCOME TAXES**
17 **ESTIMATED?**

18 A. Because the equity component of the return is subject to state and federal income tax, it is
19 necessary to increase the pre-tax return dollars, so that the after-tax return is equal to the
20 assumed cost of capital. An assumed combined 40% state and federal income tax rate is
21 used to "gross up" return dollars to achieve this result.

22

23 **Q. WHAT EXPENSE CATEGORIES DO YOU INCLUDE IN YOUR ESTIMATES**
24 **OF NETWORK-RELATED EXPENSES?**

1 A. We include Network Support, General Support, Central Office Switching, Central Office
2 Transmission, Cable and Wire, Provisioning, Network Operations, Call Completion, and
3 Billing and Collection Expenses. We also include a factor for Uncollectibles.
4

5 **Q. WHAT EXPENSE CATEGORIES ARE EXCLUDED?**

6 A. We are modeling the cost of basic local telephone service, as we have defined it
7 previously. Basic local service, while including access to operator services, directory
8 assistance, and 911, does not include the services themselves, so expenses associated with
9 these functions were not included. The study also excludes installation costs, since
10 customers are charged separately for installation. Therefore, some Customer Services
11 expenses were excluded. Marketing expenses were also excluded.
12

13 **Q. HOW ARE NETWORK-RELATED EXPENSES ESTIMATED?**

14 A. Such expenses would ideally be estimated by determining the forward-looking labor and
15 material costs of each major operational function, given the deployment of the network
16 that was modeled. We do not have studies or data that we could rely upon to help us
17 estimate operating expenses in this way. Therefore, we rely primarily on historical data
18 for U S WEST Communications in Utah as recorded in U S WEST's 1994 ARMIS
19 reports, to develop factors that can be applied to the investment outputs of the model to
20 estimate expenses.

21 Some expense categories, such as Cable and Wire expenses, appear to vary
22 directly with capital investment. For these categories, historical expenses are associated
23 with historical investment to develop an investment factor. This factor is then applied to
24 the equivalent investment amounts developed by the capital investment module to produce
25 an expense estimate.

1 Other types of expenses, such as Network Operations, appear to vary directly with
2 the number of lines provisioned rather than with capital investment. Historical data are
3 used to determine the expense per line for these categories. The resulting per line factor is
4 applied to the number of lines provisioned. Uncollectibles are treated as a percentage of
5 expenses, determined from ARMIS data for U S WEST Communications in Utah.
6

7 **Q. ARE HISTORICAL DATA USED TO DETERMINE ALL OF THE NETWORK-**
8 **RELATED EXPENSE FACTORS?**

9 A. No, there is an exception. The historical OA&M expense factor associated with central
10 office switching is overstated because the U S WEST historical expense data may include
11 software expense, which our investment module capitalizes, and because U S WEST may
12 still have some older switches, which are more expensive to maintain than are the newer
13 generation of switches that are currently being deployed. Therefore, we use an expense
14 factor from a public New England Telephone cost study.
15

16 **Q. HOW HAVE NON-NETWORK-RELATED EXPENSES BEEN DETERMINED?**

17 A. We have considered four kinds of non-network-related expenses: billing and directory
18 listing, marketing expenses, overhead expenses, and investment in equipment that is not
19 part of the network.
20

21 **Q. HOW HAVE YOU TREATED BILLING AND DIRECTORY EXPENSES?**

22 A. Using historical data, we could not discriminate between the cost of establishing new
23 customer accounts, which is not included in our definition of basic local exchange service,
24 and the cost of maintaining customer accounts, which should be included. We had no
25 direct data on the cost of the white pages directory listing. Based on the limited

1 information we have available to us, we have used a Billing and Collection factor of \$0.55
2 per line per month, and a directory listing factor of \$0.15 per line per month.

3
4 **Q. HOW HAVE YOU TREATED MARKETING EXPENSES?**

5 A. We have excluded marketing expenses because U S WEST does not have to market the
6 basic local telephone service we have modeled in this study.

7
8 **Q. HOW HAVE YOU TREATED "OVERHEAD" EXPENSES?**

9 A. It is our belief that certain costs that vary with the size of the firm, and therefore do not
10 meet an economist's definition of overhead, are often included under the classification of
11 general and administration expenses. For example, if U S WEST did not provide loops, it
12 would be a much smaller company, and would therefore have lower costs. Some of those
13 costs are nonetheless attributed to overhead by U S WEST. We therefore include a
14 portion of "overhead" costs in our estimate of the Total Service - Long Run Incremental
15 Cost (TS-LRIC) basic local service.

16 We have settled on the use of a 6% overhead loading factor in our calculation,
17 based on results from other industries. We examined the relationship between revenues
18 and overhead for selected firms in the auto manufacturing and airline industries and believe
19 this overhead loading factor to be appropriate.

20

21 **Q. ARE ADDITIONAL INVESTMENTS CALCULATED IN THE RECURRING**
22 **COST MODULE THAT ARE NOT CALCULATED BY THE INVESTMENT**
23 **COMPONENT OF THE MODEL?**

24 A. Yes. The investment module does not calculate investments in the following categories of
25 equipment: 1) Furniture; 2) Office Equipment; or 3) General Purpose Computers. We

1 have included such investments in our model as follows. We have used actual 1994 U S
2 WEST investments to determine the ratio of investments in the above categories to total
3 investments. We have multiplied this ratio by the total basic local service investment
4 estimated by the model, and treated the result as an additional investment needed to
5 provide basic service. The recurring costs of these items are then calculated in the same
6 way as recurring costs for investment categories estimated directly by the investment
7 module of the model.

8
9 **Q. HOW HAVE YOU APPLIED THE HATFIELD MODEL TO THE STATE OF**
10 **UTAH?**

11 A. As we have previously described, a primary advantage of the BCM lies in the CBG
12 database it utilizes. This database allows the Hatfield Model to be exercised for any LEC
13 and at any desired level of geographic disaggregation, down to the wire center level, if
14 that is deemed warranted. What we have done is to apply the model to calculate costs in
15 six population density zones for U S WEST 0-10, 10-100, 100-500, 500-1000, and
16 1000-5000, and greater than 5000 people/km². Each CBG has been assigned to a density
17 zone consistent with the density of the CBG, and the number of tones, investments, and
18 monthly costs of each CBG in a density zone are used to develop the composite result for
19 the density zone.

20
21 **Q. PLEASE SUMMARIZE THE INPUTS YOU HAVE USED IN APPLYING THE**
22 **RESULTS IN UTAH.**

23 A. The inputs, and their values, are shown in attachments to my testimony. Attachment 2A
24 (Exhibit RAM-2A) pertains to the distribution network; Attachment 2B (Exhibit RAM-
25 2B), to switching; and Attachment 2C (Exhibit RAM-2C), to financial assumptions. The

1 descriptions of individual parameters are self-explanatory, except perhaps for the upper
2 part of Attachment 2B (Exhibit RAM-2B) that deals with the cost per line of switching.
3 Use of the parameters shown there can be illustrated by the following examples:

- 4
5 * For a switch serving 10,000 lines, since this is less than 11,200 lines, the rounded
6
7 cost per line is $\$286.28 - (.0163 * 10,000) = \124
8
9 * For a switch serving 50,000 lines, since this is greater than 11,200 lines, the
10
11 rounded cost per line is $\$108.72 - (.0004 * 50,000) = \88 .
12

13 **Q. YOU HAVE DESCRIBED THE FINAL STEP OF THE HATFIELD MODEL AS**
14 **COMBINING THE OPERATING EXPENSES AND INVESTMENT-RELATED**
15 **EXPENSES TO PRODUCE A MONTHLY SERVICE COST PER LINE. WHAT**
16 **ARE THE RESULTS OF YOUR ANALYSIS WHEN APPLIED TO U S WEST IN**
17 **UTAH?**

18 **A.** The results are included as Attachment 3 (Exhibit RAM-3) to this testimony. Each density
19 zone appears in one of the columns, with the right-most column being the totals. The top
20 part of the chart shows the recurring annual costs in various network and operations
21 categories, added to produce a recurring annual cost subtotal. Below that are various
22 factors -- other taxes, overhead, and uncollectibles -- which are used to gross up the cost
23 results to yield the total annual cost shown at the bottom of each column. The totals are
24 followed by the estimated number of residential, business, and total access lines. Dividing
25 the annual cost total by the total number of access lines, and further dividing the result by
26 12, yields the cost per line per month shown as the last line on the chart. The weighted
27 average monthly cost per line is \$14.83 and ranges between \$11.13 in the highest density
28 zone to \$53.09 in the lowest range.

1
2 **Q. PLEASE DESCRIBE THE EXTENSION OF THE MODEL TO CALCULATE**
3 **ONLY THE COSTS ASSOCIATED WITH THE LOCAL LOOP.**

4 A. The extension involves five steps. First, we compute the capital carrying costs associated
5 with the loop investment determined by the BCM part of the Hatfield Model, using the
6 same present value methodology we use for the local network as a whole. Second, we
7 add the network-related expenses directly associated with the loop. Third, we add a
8 portion of the Network Operations, Network Support, and General Support Capital Costs
9 expenses that are identified with the loop. Fourth, we add in the Billing and Collection
10 factor, which we previously said was \$0.55 per month per line. We do not include the
11 Directory cost of \$0.15 per line, since a local loop would not include a directory listing.
12 Incidentally, including the entire Billing and Collection expense is likely to overestimate
13 that expense, since expenses associated with billing another service provider for loops on a
14 bulk basis are likely to be substantially lower than those associated with billing individual
15 end users.

16 In the final step, the resulting expenses are then added, and grossed up by
17 overhead, taxes, and uncollectibles in the same fashion as discussed previously. This
18 yields the estimate of the monthly cost per line for the loop.

19 Network Operations, Network Support, and General Support Capital Costs are
20 identified with the loop proportionally to the amount of investment in the loop compared
21 to the amount of investment in the entire local network. This proportion is determined
22 separately in each density zone. Statewide, the ratio is 694.
23

24 **Q. WHAT ARE THE RESULTS OF THIS CALCULATION?**

1 A. Attachment 4 (Exhibit RAM-4) shows the loop costs for each density zone. The loop
2 costs range from \$7.59 in the most dense zone to \$44.60 in the least dense zone, with a
3 statewide weighted average of \$10.82.

4
5 **Q. ARE THERE POSSIBLE REFINEMENTS TO YOUR CALCULATIONS?**

6 A. The basic modeling approach we have used, which uses a TSLRIC methodology, is the
7 appropriate one. There are, however, a large number of parameters which must be input
8 to the model. Some of those have been determined from published FCC Common Carrier
9 statistics and demographic statistics. For others, we have used various estimates based on
10 information our firm has learned in the course of its dealings with the industry and talking
11 with industry experts. These include, for instance, the list prices and typical discount
12 percentages for network equipment purchases.

13 We believe the input values we have used are appropriate for U S WEST in Utah.
14 To the extent that U S WEST or the Commission staff provides alternative values that are
15 more appropriate, we could make new runs based on the revised parameter values. It is
16 my opinion that the values we have used are close enough to the correct values that any
17 such modifications would lead to only small changes in the results I have presented during
18 this testimony.

19
20 **Q. YOU HAVE MADE AN EXTENSION TO THE HATFIELD MODEL TO ALLOW**
21 **YOU TO ESTIMATE THE COST OF LOCAL LOOPS. IS IT SIMILARLY**
22 **POSSIBLE TO MODIFY THE MODEL TO ESTIMATE THE COST OF**
23 **PROVIDING INTERLATA ACCESS?**

24 A. Yes, that can be done with appropriate modifications to reflect the increased utilization of
25 local switching and interoffice facilities.

1

2 **Q. PLEASE SUMMARIZE YOUR TESTIMONY**

3 A. We have developed a methodology, which we refer to as the Hatfield Model, for
4 estimating the costs of local loops provided by U S WEST in Utah. The Hatfield Model
5 incorporates the Benchmark Cost Model, developed by MCI, Sprint, U S WEST, and
6 NYNEX. The loop costs are separately identified for each population density zone in
7 Utah. They range from \$7.59 to \$44.50, with a statewide weighted average of \$10.62. In
8 arriving at the local loop costs, the Hatfield Model also estimated the cost of basic
9 telephone service provided by U S WEST in Utah. The weighted average cost of basic
10 telephone service across all population density zones is \$14.83.

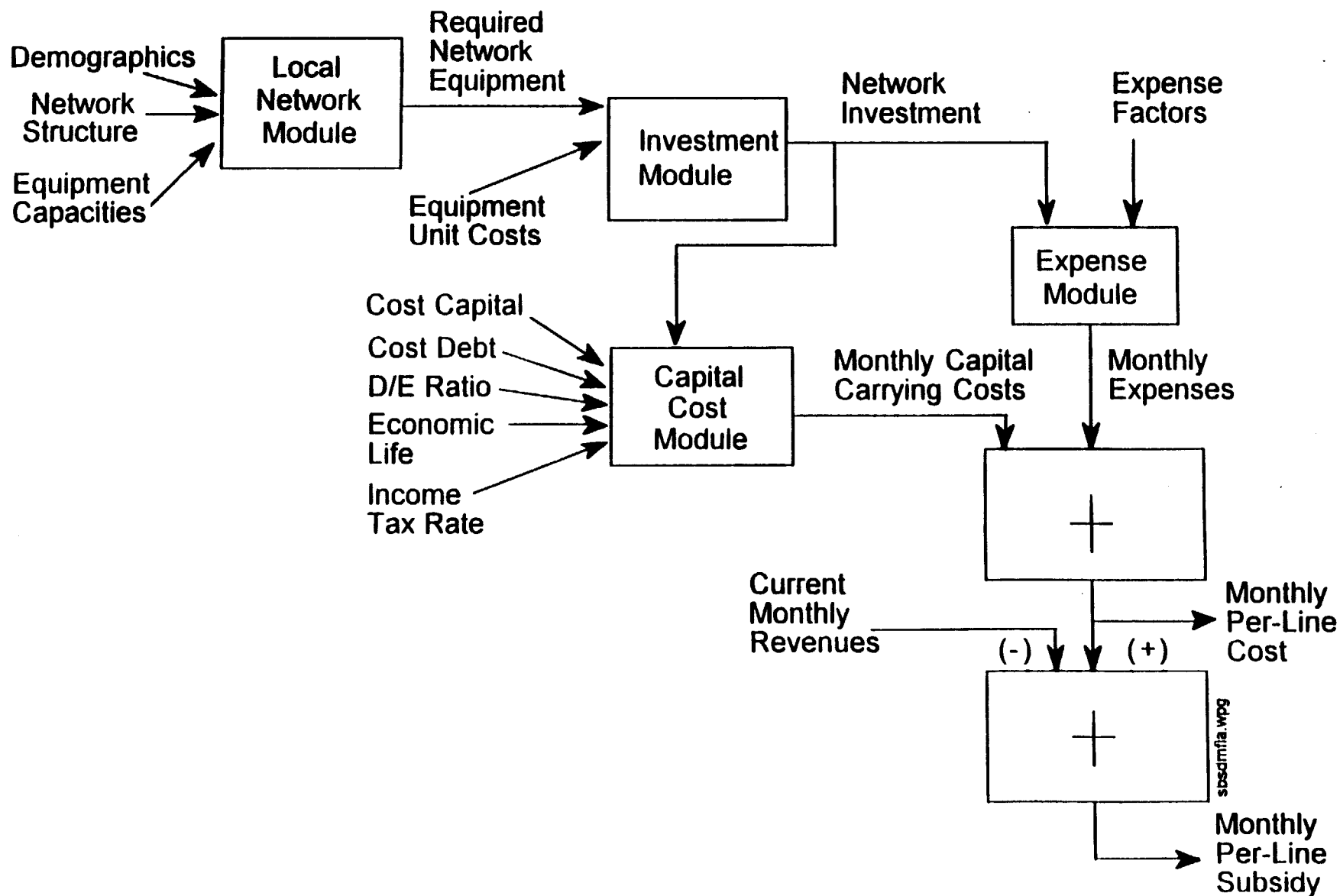
11

12 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

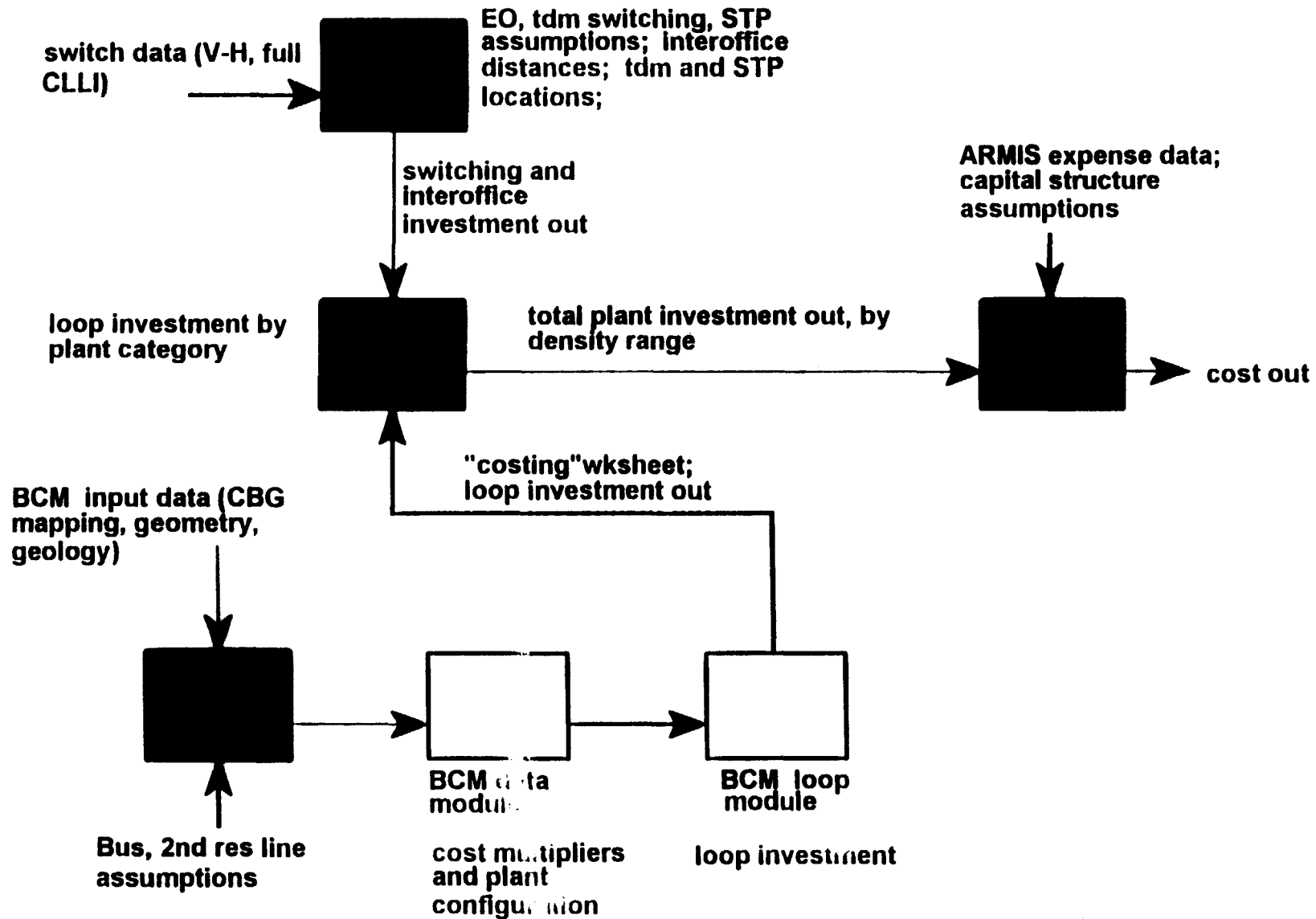
13 A. Yes.

14

Attachment 1A: Basic Universal Service Modeling Process



Attachment 1B: Hatfield BCM Extensions



change to

Low-density DLC investment per access line
\$ 500

Low density DLC discount
25%

DLC discount
40%

Cable Size	UG cable	Aerial cable
3600	\$ 22.20	\$ 21.90
3000	\$ 18.80	\$ 18.50
2400	\$ 14.30	\$ 14.10
1800	\$ 12.44	\$ 12.24
1200	\$ 10.68	\$ 10.00
900	\$ 7.82	\$ 7.51
600	\$ 7.13	\$ 7.05
400	\$ 4.56	\$ 4.62
200	\$ 2.36	\$ 2.33
100	\$ 1.26	\$ 1.27
50	\$ 0.68	\$ 0.57

Cable Size	UG cable	Aerial cable
4200	\$ 25.70	\$ 25.40
3600	\$ 22.20	\$ 21.90
3000	\$ 18.80	\$ 18.50
2400	\$ 14.30	\$ 14.10
1800	\$ 12.44	\$ 12.24
1200	\$ 10.68	\$ 10.00
900	\$ 7.82	\$ 7.51
600	\$ 7.13	\$ 7.05
400	\$ 4.56	\$ 4.62
200	\$ 2.36	\$ 2.33
100	\$ 1.26	\$ 1.27

Cable Size	UG cable	Aerial cable
144 \$	5.56	\$ 5.24
96 \$	3.80	\$ 3.53
72 \$	2.84	\$ 2.65
60 \$	2.41	\$ 2.23
48 \$	1.98	\$ 1.84
36 \$	1.60	\$ 1.46
24 \$	1.18	\$ 1.05
18 \$	0.98	\$ 0.85
12 \$	0.79	\$ 0.66

Attachment 2B

Switching Assumptions

switching parameters

**high — per-line investment
curve above breakpoint**

slope	-0.0004
intercept	108.72

breakpoint

11,200 lines

**low — per-line investment curve
below breakpoint**

slope	-0.0163
intercept	286.28

switch maximum line size

100,000 lines

switch fill

0.8

**wire center investment
multiplier**

1.25

**switch installation cost
multiplier**

1.1

switch price/line size references **\$241/line at 2,782 lines**
\$104/line at 11,200 lines
\$75/line at 80,000 lines

Attachment 2C

Capital Structure and Miscellaneous Assumptions

Aggregate economic life, years	18
Debt	42.80%
Cost of debt	7.35%
Equity	57.20%
Cost of equity	11.5%
Overall cost of capital	9.72%
Income tax rate	40%
Local traffic percentage of total	75%
Per-line monthly billing and directory listing expense	\$ 0.70

Attachment 3
U S WEST Communications
All Utah Wire Centers
Monthly Cost of Local Service Per Line by Population Density Zone

	0 - 10 pop/km2	10 - 100 pop/km2	100 - 500 pop/km2	500 - 1000 pop/km2	1000 - 5000 pop/km2	> 5000 pop/km2	Totals
Annual Capital Cost	\$ 8,815,377	\$ 7,225,997	\$ 7,738,448	\$ 7,894,450	\$ 27,267,868	\$ 1,032,483	\$ 59,974,624
Capital Cost - Genl Supp	\$ 1,228,708	\$ 1,007,898	\$ 1,078,481	\$ 1,101,242	\$ 3,803,762	\$ 144,027	\$ 8,366,208
Network Expenses	\$ 1,852,899	\$ 1,593,527	\$ 1,852,419	\$ 1,718,146	\$ 5,757,851	\$ 211,832	\$ 12,788,474
Network Operations	\$ 1,211,802	\$ 2,922,008	\$ 5,232,209	\$ 8,785,514	\$ 25,123,788	\$ 1,212,678	\$ 42,498,000
Network Support	\$ 54,208	\$ 38,608	\$ 35,288	\$ 34,375	\$ 124,120	\$ 4,209	\$ 288,801
Billing, collection, and directory	\$ 199,278	\$ 480,513	\$ 860,418	\$ 1,117,498	\$ 4,131,509	\$ 199,420	\$ 6,888,629
Subtotal	\$ 13,363,088	\$ 13,268,647	\$ 16,598,259	\$ 18,661,224	\$ 66,208,888	\$ 2,804,649	\$ 130,902,736
other taxes	0.050	0.050	0.050	0.050	0.050	0.050	
overhead loading	0.080	0.080	0.080	0.080	0.080	0.080	
uncollectibles	0.006	0.006	0.006	0.006	0.006	0.006	
Total	\$ 15,113,173	\$ 15,004,125	\$ 18,772,064	\$ 21,105,207	\$ 74,879,991	\$ 3,171,962	\$ 148,046,522
Total residential lines	21,660	48,403	75,116	93,907	351,319	16,958	607,363
Total business lines	2,063	8,801	27,315	39,128	140,528	8,783	224,617
Total switched access lines	23,723	57,204	102,431	133,035	491,848	23,741	831,980
total/line/month	\$ 53.09	\$ 21.86	\$ 15.27	\$ 13.22	\$ 12.69	\$ 11.13	\$ 14.83

Attachment 4
U S WEST Communications
Monthly cost of local loops

population per sq km	0 - 10	10 - 100	100 - 500	500 - 1000	1000 - 5000	> 5000	total
total access lines	23,723	57,204	102,431	133,035	491,846	23,741	831,980
loop cost per line	\$ 44.50	\$ 16.40	\$ 10.89	\$ 9.26	\$ 9.12	\$ 7.59	\$ 10.82

APPENDIX E

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of the Request for Agency
Action of PHOENIX FIBERLINK OF
UTAH, INC. for Authority to Provide
Intrastate Telecommunications
Services in the State of Utah,

DOCKET NO. 95-2206-01

In the Matter of the Application of
ELECTRIC LIGHTWAVE, INC. for
Authority to Compete as a Telecommuni-
cations Corporation and to Offer Public
Telecommunications Services,

DOCKET NO. 94-2202-01

In the Matter of an Investigation into
Collocation and Expanded Interconnection.

DOCKET NO. 94-999-01

SURREBUTTAL TESTIMONY

OF

GERALADINE G. SANTOS-RACH

U S WEST COMMUNICATIONS, INC.

MAY 1, 1996

INDEX OF TESTIMONY

- I. IDENTIFICATION OF WITNESS
- II. PURPOSE OF TESTIMONY
- III. GENERAL
- IV. REVIEW OF AT&T'S HATFIELD MODEL USING AT&T GUIDELINES
AND AT&T'S TSLRIC PRINCIPLES
- V. EVALUATION OF "AVOIDED" RETAIL COST MODELS
- VI. TESTIMONY RECOMMENDATIONS

I. IDENTIFICATION OF WITNESS

Q. PLEASE STATE YOUR NAME, ADDRESS, AND CURRENT POSITION.

A. My name is Geraldine Santos-Rach. My business address is Suite 4400, 1801 California, Denver, Colorado 80202. I am employed by U S WEST as a Director-Product Cost Specialist.

Q. ARE YOU THE SAME GERALDINE SANTOS-RACH THAT PROVIDED DIRECT TESTIMONY IN THESE DOCKETS?

A. Yes.

II. PURPOSE OF TESTIMONY

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A: The purpose of this testimony is to rebut the positions taken by AT&T witnesses Mercer, Bell and Monighetti. This testimony is based on the interrogatory responses received by U S WEST from AT&T and on the partial review of the Hatfield Model conducted April 25, 1996. The cost study sponsored by witness Mercer should not be adopted by this commission for the following reasons:

1. The study is not a TSLRIC cost study as defined in the Utah Telecommunications Reform Act of 1995.

2. The cost study proposed by Dr. Mercer in this docket does not even attempt to meet AT&T's own requirements for a cost study as set out by witness Parker in this docket.

3. The study produces results which are unreasonable and directly contradict studies which AT&T has sponsored in other recent proceedings.

1
2 The remainder of my testimony will address each of these issues in more
3 detail.

4 **III. GENERAL**

5
6 **Q: WAS U S WEST ABLE TO CONDUCT A COMPLETE REVIEW**
7 **OF THE HATFIELD MODEL SPONSORED BY AT&T IN THIS**
8 **PROCEEDING?**

9 **A: No.**

10
11 **Q: HAS AT&T SPONSORED LOOP COST NUMBERS**
12 **SIGNIFICANTLY DIFFERENT THAN THOSE PRODUCED BY**
13 **THE HATFIELD MODEL IN THIS PROCEEDING?**

14 **A:** Yes. On March 18, 1996, in an informal presentation before the FCC,
15 AT&T testified that the investment required to enter a local exchange
16 market was \$1,255 per line nationally. Dr. Mercer in this proceeding has
17 sponsored U S WEST forward-looking investment cost estimates of \$361
18 per line¹. Dr. Mercer's estimate for Utah is less than one-third the cost
19 per line that AT&T said it would incur to build a national network.
20

21 **Q: DO YOU BELIEVE THIS DISCREPANCY IS REASONABLE?**

22 **A:** While I do agree with Dr. Mercer's implied statement that U S WEST is
23 more efficient than AT&T, I do not believe it is unreasonable to assume
24 that U S WEST could build a network in Utah for less than one-third the
25 amount that it would cost AT&T to build a similar network nationally.

¹ Data request response 3.18 to AT&T from U S WEST.

1

2 **Q: IS A \$361 COST PER LINE REASONABLE IN TODAY'S**
3 **ENVIRONMENT?**

4 A: No. As illustrated in AT&T's exparte to the FCC, the average investment
5 per access line for each RBOC is \$1,793. U S WEST estimates that the
6 cost of adding one additional line to the existing network is \$1,000-
7 \$1,700. Dr. Mercer adopts a study that the developers admit currently
8 significantly understates the investment required for a loop and then
9 revises the inputs to further reduce the results. He then theoretically
10 verifies his results by comparing the output to studies that were never
11 designed to produce total service long run incremental costs.

12

13 **Q: DO YOU BELIEVE DR. MERCER'S PROJECTED COST OF**
14 **LAYING A NEW LOOP OF \$361 IS REASONABLE?**

15 A: No. TSLRIC is designed to give the forward looking cost of providing
16 service to all the company's customers. The increment of time that is
17 used is defined as the period in which all product inputs become
18 variable. Dr. Mercer claims that this cost would be \$361 per loop.
19 However, when estimating the cost of deploying the broadband network,
20 the RBOC's identified a cost of approximately \$1,000 per loop just to
21 modify the current system to carry broadband.

22

23 **Q: WHAT WAS U S WEST'S EXPERIENCE WITH BROADBAND**
24 **DEPLOYMENT?**

25 A: Although U S WEST originally estimated a cost of approximately \$1,000
26 per loop to overlay broadband to the existing network, the actual costs
27 were more than 50% greater than U S WEST originally estimated.

1

2 **Q: DID OTHER RBOC'S EXPERIENCE SIMILAR PROBLEMS?**

3 A: Yes. In fact, the cost of placing fiber to the home was so prohibitive,
4 nearly every RBOC halted or delayed their plans for broadband
5 deployment. This is a direct contrast to Dr. Mercer's testimony that claims
6 that the current cost of deploying a network is less than one third of the
7 amount RBOC's currently have invested. Dr. Mercer and AT&T witnesses
8 who support his results can only make these preposterous claims
9 because they do not have to live with the results. If AT&T is required to
10 meet all U S WEST's future held order commitments for the amount Dr.
11 Mercer is testifying to in this proceeding, I would guarantee that the \$361
12 per loop would disappear, or U S WEST would be able to significantly
13 reduce its capital outlays in this state. Remember that when asked how
14 much it would cost them to put in a network, AT&T quoted approximately
15 \$1,200 per line. In fact, U S WEST hereby offers to hire AT&T to build
16 U S WEST's future network additions in Utah for an average price of
17 \$361 per access line.

18

19 If AT&T could provision all U S WEST loops, on average, for \$361, they
20 would have no need for resale because their pay-back period for
21 investment would be slightly more than two years.² This would allow
22 them sixteen years of almost pure profit until the economic life they claim
23 is reasonable had expired. If this is actually true, why are AT&T and
24 others unwilling to commit resources to Utah and become a statewide
25 wireline facility based provider of local exchange service?

² Calculated as \$361 investment/ \$14.58 residence rate plus EULC. This is a conservatively high calculation of the payback period since business rates are significantly higher than residential rates, causing a shortened payback period.

**IV. REVIEW OF AT&T'S HATFIELD MODEL USING AT&T
GUIDELINES AND TSLRIC PRINCIPLES**

**Q. HAS U S WEST BEEN ABLE TO EXTENSIVELY AUDIT THE
"HATFIELD MODEL"?**

A. No.

Q. WHY NOT?

A. Copies of key information relevant to the Model were not made available to U S WEST to validate key assumptions, inputs and methodology even though U S WEST requested them in discovery.³ Other documents that are normally included as part of cost study and model documentation simply are not available.⁴

**Q. PLEASE IDENTIFY HOW U S WEST PERFORMED ITS TSLRIC
APPLICATION AND REVIEW OF THE HATFIELD MODEL
GIVEN THE LACK OF MATERIAL PROVIDED TO U S WEST.**

A. U S WEST did the best objective analysis possible given the short time constraints and the information made available for its review. U S WEST reviewed the testimony of all AT&T witnesses, data request responses

³ In data request 2.1 dated April 15, 1996, U S WEST requested copies of all work papers, studies, and calculations or any other documents that support the average monthly costs per line provided in Dr. Mercer's direct testimony. No additional work papers or calculations were provided with that request and we were referred to Dr. Mercer's testimony. Some source documents were provided but the detailed information included as part of Attachment A and Attachment C was unreadable. After a short additional delay, a readable copy of Attachment A was provided. U S WEST requested in data request 3.1 a copy of all models used to develop the Mercer estimate of the LRIC cost for local service and a specific copy of both the BCM and the Hatfield Model were requested. Copies were not provided but made available for review by U S WEST. U S WEST was unable to arrange for review of the materials until April 25, 1996. At that point in time, the entire Hatfield Model was not available for inspection, as the two BCM modules incorporated into the Hatfield Model were not available. Consequently, U S WEST was unable to verify that the extracted BCM Modules were incorporated "in-tact". However, Dick Chandler, representing Hatfield and Associates indicated that the BCM Modules had been incorporated "intact".

⁴ See response to U S WEST data request 3.3 to AT&T. Data request 3.3 asked, in relation to the Hatfield Model, the BCM model and any other model relied upon, for a list of all inputs, source of the data, documentation describing the purpose and function of the model, methods and procedures used in the model and all algorithms and assumptions. Dr. Mercer responded that no documents exist describing the purpose and function of the model, no documentation exists describing the methods and procedures used in the model and that the assumptions were delineated in Dr. Mercer's testimony and exhibits.

1 from Dr. Mercer and AT&T, and the source materials made available to
2 U S WEST. U S WEST focused its review using the Guidelines and
3 AT&T Principles suggested by AT&T in the testimony of Ms. Parker. As
4 stated in my rebuttal testimony, U S WEST does not concur, in totality,
5 with the Guidelines and AT&T Principles. However, since we were
6 reviewing an AT&T supported Model and study, we felt it was appropriate
7 to review based on their own suggested standards.

8
9 **Q. DOES THE HATFIELD MODEL COMPLY WITH UTAH**
10 **LEGISLATIVE REQUIREMENTS FOR A TSLRIC STUDY?**

11 A. No. The Telecommunications Reform Act, H.B. 364, Section (13) defines
12 TSLRIC as:

13
14 "Total service long run incremental cost" means the forward-
15 looking incremental cost to a telecommunications corporation
16 caused by providing the entire quantity of a public
17 telecommunications service, network function, or group of
18 public telecommunications services or network functions by
19 using forward-looking technology, reasonably available,
20 without assuming relocation of existing plant and equipment.
21 The "long-run" means a period of time long enough so that cost
22 estimates are based on the assumption that all inputs are
23 variable."
24

25 The Hatfield Model fails to meet *at least* three requirements of the Act.
26 First, the Hatfield Model is not "long-run" in that it excludes significant
27 costs that vary in the "long-run". The model developers of the BCM
28 openly acknowledge that significant loop costs are excluded.⁵ Second,
29 the Hatfield Model does not incorporate forward-looking costs for either
30 capital expenditures or operating expenses. Third, the Hatfield Model
31 incorporated drop costs based on an incremental demand cost study.
32 This violates the "entire quantity" provisions of the Act. U S WEST was
33 unable to confirm if it also violates the "without assuming relocation of
34 existing plant and equipment" clause.

35
36 The specifics of each of these violations of the Act are discussed in later
37 sections of my testimony.

⁵ See testimony of U S WEST witness Peter Copeland.